

# Work Order ID 61853



Page 1

Wednesday, September 08, 2010 9:16:33 AM

Item ID: D212-664-101

Accept



Setup Start



Revision ID:

Stop



Item Name: Crosstube Fwd

Start Date: 9/8/2010 Start Qty: 1.00



Cust Item ID:

Required Date: 9/24/2010 Req'd Qty: 1.00



Customer:

Reference:

Approvals:

Process Plan:

*BL*

Date: 10-9-08

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr	Revision Nbr
D212-664-141	Rev D

100

0.00



DOCUMENT CONTROL

DC

Memo

0.00

Document Control

Photocopy bluefile and create labels as per PPP D212-664-101 CHG003

*S 10/11/01*

*HJ for BG 10-11-01*

110

0.00



Pick Kit

Packaging

Memo

0.00

Packaging

Packaging

*(IX) MB 10-09-21*

120

0.00



BENDING MACHINE - CROSSTUBES

Memo

0.00

CNC Bend 2

CNC Alpha 160 Bender

Bend tube as per Dwg D212-664-141 using CNC bender program 212-fw and Folio D212-664-101

*(CX) MB 10-09-21*

*61853 D212664101*

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

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Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_  
QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Run Start

Stop

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130 QC Quality Control	QC15- Crosstube Dimensional Check  Memo	0.00 0.00				<u>10</u>			
140 Crosstubes Crosstubes Crosstubes	Crosstubes  Memo 1-Drill pilot holes in tube as per Dwg D212-664-141 using drill Jig DT8548 & DT8549, using drill table DT8577, set-up towers in hole #7 as per QSI 10  2-Ream hole to finish size in tube as per Dwg D212-664-141 using drill Jig DT8548 & DT8549. Check dimensions between holes, both sides on both cuffs, to ensure alignment with saddle holes.  3-Scribe part # and batch # using vibrating stylus as per Dwg D212-664-141  4-Deburr & Inspect for surface damage. Repair damage within limits as per Dwg D212-664-141	0.00 0.00							

MB  
10-09-21  
DP 10-9-21

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: D212-604-101 PAR #: N/A Fault Category: crosshatch NCR: Yes No DQA: SS Date: 10.11.08  
 Resolution: re-work Disposition: re-work QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR: <u>61853</u>		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
10.09.29	17D	Tube was polished 3 TIMES DUE TO NDT FINDINGS	<u>CP</u> 10/09/29 <u>DS/042</u>	Acceptable. <u>CP</u> MEASURED WALL THICKNESSES AND FOUND NO ABNORMAL RESULTS. WALL THICKNESSES IN CRITICAL AREAS WERE ABOVE NOMINAL	<u>N/A</u>	<u>SS</u> 10/11/01	<u>CP</u> 10/09/29 <u>DS/042</u>	<u>SS</u> 10/11/01
		Re: Process.						

NOTE: Date & initial all entries

**Work Order ID 61853**

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Item ID: D212-664-101

Accept

Revision ID:

Item Name: Crosstube Fwd

Start Date: 9/8/2010 Start Qty: 1.00

Required Date: 9/24/2010 Req'd Qty: 1.00

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_  
QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Run Start  
Stop

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

150

Crosstubes Chemical Conversion

0.00



HandFXtube

Memo

0.00

Hand Finishing Crosstubes

Chemical Conversion Coat within 24 hours of bending and drilling

DP 10-9-21

160

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Quality Control

8/10/09/21

40

170

Outsource process - NDT per QSI038 4.1

0.00



Outsource2

Memo

0.00

Outsource process - NDT

Liquid Penetrant Inspection as per QSI 038  
Issue P/O: 12615  
LPI as per ASTM 1417 Level 2  
Attach copy of NDT results to work order

P/O: 12653

CZ 10/9/22①

Pro →

CZ 10/9/28

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: D212-664-101 PAR #: N/A Fault Category: Resolution NCR: (Yes) No DQA: ls Date: 10.11.08  
 Resolution: re-work Disposition: re-work QA: N/C Closed: ✓ Date: 10/11/08

NCR: <u>61853</u>		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
10/9/22	A 170	Large <del>grinding marks</del> <sup>indications</sup> were found running lengthwise on the tube 2" to 26" away from the cuff. R.C. process	/QS1042	- Measure wall thickness with an ultrasonic & record.	P 10.10.07	S 10/10/07	/QS1042	/1009-22
				- re-grind the affected areas to remove the indications.	DP 10-9-28			
				- Visually inspect with a reference only LP inspection to determine if indications removed.	was not Done Belr 10-9-28			
				- Conversion cert per COS1005	DP 10-9-28			
			/QS1042	- Perform an ultrasonic measurement along the tube & record on a FAI sheet, to determine if tube is acceptable, per Engineering	P 10.10.07	S 10/10/07	/QS1042	/1009-22
				- Issue P/O to have tube NDT'd	CY 10/10/28			

NOTE: Date & initial all entries

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Reference:

Cust Item ID:

Customer:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Run Start

Stop

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

180

Receive & Inspect for Damage & Mat'l Certs  
Packaging

0.00



Packaging

Memo

0.00

Packaging

Ensure copy of NDT results attached to work order.

CY 10/9/22 ①

P 10/9/29 ①

190

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Quality Control

Inspect for damage &amp; ensure results are as per Dwg D212-664-141

ml 10 09 29 ①

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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Customer:



Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Run Start

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
200	Spray Painting per QSI005 4.2	0.00							
	SprayPaint								
	<b>Memo</b>	0.00							
Spray Painting	1-Prime inside and outside crosstube as per QSI 005 4.2 2-Paint outside crosstube with White Imron as per QSI 005 4.2								
	PRIME: 9 00 Start Time: 9 00 Fininsh Time: 10 00								
	PAINT: 2 00 Start Time: 2 00 Finish Time: 3 00								
210	QC14- Inspect Spray Paint	0.00							
	QC								
Quality Control	<b>Memo</b>	0.00							
	Then, Wrap in plastic bag to protect from scratches								

25 10 - 10 - 15 (x1)

ml 10 10 28 (1)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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Required Date: 9/24/2010 Req'd Qty: 1.00




Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_  
QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Run Start

Stop

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
220  Crosstubes	Crosstubes	0.00				<u>ml</u>	<u>10</u>	<u>10</u>	<u>28</u> ①
Crosstubes	<b>Memo</b> 1- Lightly scuff the bonded area using a 320 grit sand paper and clean the area with 41058 wash 'n' wipe 2-Install supports with magnobond as per QSI 015 Adhere for for 12 Hrs A/R 6398 Magnobond Batch: <u>115580 exp 07/2011</u> <u>Torque: ml 10.10.29 ①</u>	0.00							
230  QC	QC5- Inspect part completeness to step on W/O	0.00				⑩			
Quality Control	<b>Memo</b>	0.00							
240  Packaging	Pick Kit	0.00				<u>whl</u>	<u>sl</u>		
Packaging	<b>Memo</b>	0.00							

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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Start Date: 9/8/2010 Start Qty: 1.00



Cust Item ID:

Required Date: 9/24/2010 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Run Start



QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
250  QC Quality Control	QC4- 100% Inspect kits for completeness  Memo	0.00 0.00				<u>10</u>			
260  Packaging Packaging	Packaging  Memo Identify and pack for shipping as per PPP D212-664-101	0.00 0.00							
270  QC Quality Control	QC21- Final Inspection - Work Order Release  Memo	0.00 0.00							

8/10/10/01

REV E

10/11/01

10/11/01

ME  
10-11-01

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

Wednesday, September 08, 2010 9:16:36 AM

Page 1

Work Order ID: 61853

Parent Item: D212-664-101

Parent Item Name: Crosstube Fwd



Start Date: 9/8/2010

Required Date: 9/24/2010

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP Rev:E 04.02.16 Reformat KJ/DS  
IPP Rev:F 06-03-29 Remove Comments on Pick List JLM  
IPP Rev:G 07-04-30 As per Rev C JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
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D212-664-101TRN Manufactured No



Crosstube Turning Detail

110 Each 2.0000 1 1



B-61855 MB 10-09-20

Location

Loc Qty

Loc Code

LG

2

61399

1

61400

1

D3595-063-450 Manufactured No



RUBBER CUSHION

230 Each 131.6590 4 4.210526



mt 10 10 28

Location

Loc Qty

Loc Code

LG

131.6589737

53775

5.97897368

58161

3.56

59580

10.12

60983

33

61465

79

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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Page 2

Work Order ID: 61853

Parent Item: D212-664-101

Parent Item Name: Crosstube Fwd

Start Date: 9/8/2010

Required Date: 9/24/2010

Start Qty: 1.00

Required Qty: 1.00

MS21920-25

Purchased

No

220

Each

87.0000

4

4



Clamp(per MIL-DTL-8783C)



*ml 10 10 28*

## Location

## Loc Qty

## Loc Code

LG

55

113281

0

114759

5

114901

25

115278

25

ST451

32

113281

5

113282

18

113744

1

114141

8

D2893-1

Manufactured

No

220

Each

31.0000

2

2



2.75 Support



*ml 10 10 28*

## Location

## Loc Qty

## Loc Code

LG

31

56354

12

59457

19

D3428-1

Manufactured

No

240

Each

5.0000

1

1



Placard



*10/11/18 BG2096*

## Location

## Loc Qty

## Loc Code

ST056

5

60484

5

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Shop Packet Print

Page 2

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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Page 3

Work Order ID: 61853

Parent Item: D212-664-101

Parent Item Name: Crosstube Fwd

Start Date: 9/8/2010

Required Date: 9/24/2010

Start Qty: 1.00

Required Qty: 1.00

AN6-35A Purchased No 240 Each 39.0000 4



BOLT



10/1/11 SP

Location Loc Qty Loc Code

ST343 39

115204 39

AN6-36A Purchased No 240 Each 48.0000 4



Bolt



10/1/11 SP

Location Loc Qty Loc Code

ST343 48

115016 48

MS21042L6 Purchased No 240 Each 302.0000 6



Nut



10/1/11 SP

Location Loc Qty Loc Code

ST300 302

111578 4

114495 98

115300 200

AN960JD616 NAS1149D0663J Purchased No 240 Each 0.0000 18



Washer



10/1/11 SP

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Shop Packet Print

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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

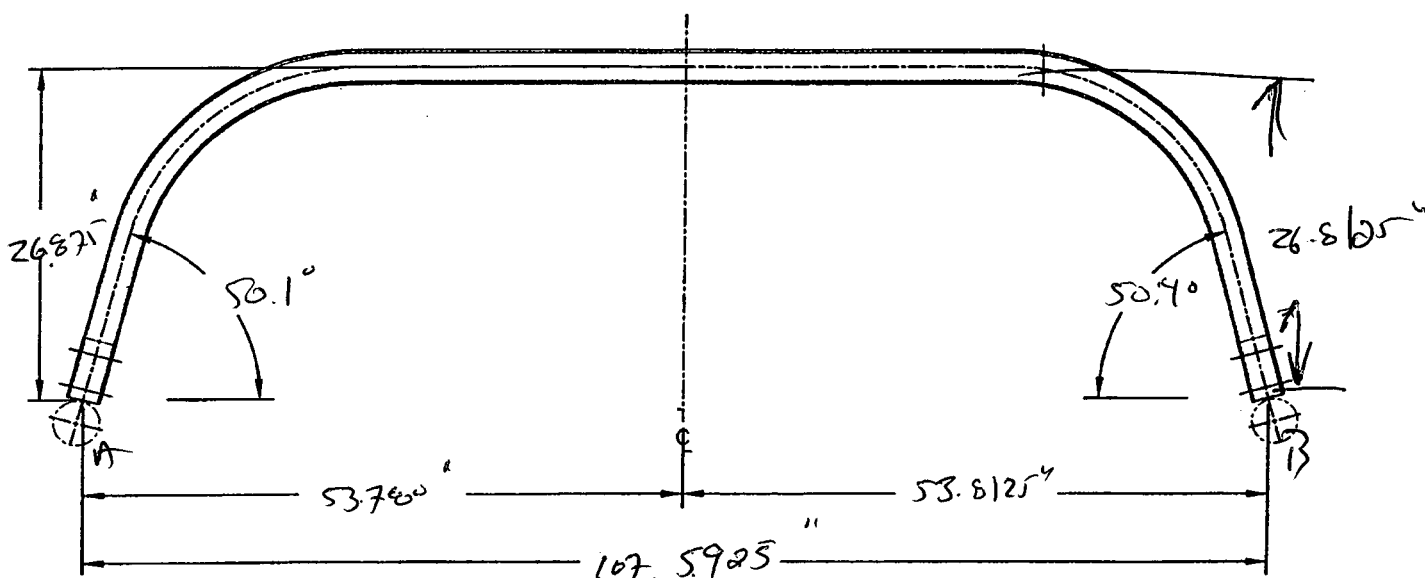
Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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**NOTE:** Date & initial all entries

<b>DART AEROSPACE LTD</b>	<b>Work Order:</b> 61853
<b>Description:</b> Crosstube High Fwd (205/212/412)	<b>Part Number:</b> D212-664-101
<b>Inspection Dwg:</b> D212-664-141 <b>Rev:</b> D	<b>Page 1 of 1</b>

Required Dimension	Min	Max
Height	26.79	27.05
1/2 Span	53.59	53.85
Angle	49	52
Total Span	107.18	107.7



Comments

QC15 Inspection	8
Date	10/05/24

Rev	Date	Change	Revised by	Approved
A	07.02.06	New Issue	KJ/JM	
B	07.05.31	Dimensions updated per Dwg Rev C	KJ/JM	
C	10.04.01	Dwg Rev updated	KJ	

**Dart Aerospace Ltd**

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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**NOTE:** Date & initial all entries

Item	Qty -141	Qty -141B	Part Number	Description
1	X		D212-664-141	CROSSTUBE ASSEMBLY (205/212/412 HIGH FWD)
2		X	D212-664-141B	CROSSTUBE ASSEMBLY (214 HIGH FWD)
3	1	1	D6005-128	CROSSTUBE
4	2	2	D2893-1	SUPPORT
5	4	4	D3595-063-450	RUBBER CUSHION
6	4	4	MS21920-25	CLAMP (OR MS21920-26)
7	A/R	A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTRON/BELL SPEC. 299-947-100, TYPE II, CLASS 2 ADHESIVE)

#### GENERAL NOTES:

- MATERIAL: MANUFACTURED FROM D6005-128  
FINISHED LENGTH = 126.514±0.020
- FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1  
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2  
PAINT OUTSIDE PER DART QSI 005 4.2
- TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- UNITS: INCHES UNLESS OTHERWISE NOTED.
- BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- IDENTIFICATION: SCRIBE DART PART NUMBER "D212-664-XXX" AND BATCH NUMBER ON INSIDE OF CUFF  
USING VIBRATING STYLUS
- WEIGHT: D212-664-141 = 33.6 lbs (PER IIN-D212-664)  
D212-664-141B = 33.6 lbs (PER IIN-D212-664)
- PART IS SYMMETRIC ABOUT CENTERLINE.
- RUN CUTTER OFF PART. BLEND OUT EDGE LONGITUDINALLY, TRANSITION SHOULD BE SMOOTH.
- BEND PROGRESSIVELY WITH A MINIMUM OF 3 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 6% BASED ON O.D.
- LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.
- INSTALL D2893-1 SUPPORT USING 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 TO THE SURFACE OF D2893-1 THAT WILL BE IN CONTACT WITH THE CROSSTUBE PER QSI 015. LET CURE FOR 12 HOURS AFTER INSTALLATION AND PRIOR TO PACKAGING.
- INSTALL MS21920-25 CLAMPS (OR -26) WITH D3595-063-450 RUBBER CUSHIONS TO SECURE THE D2893-1 SUPPORT ON TOP SIDE OF THE CROSSTUBE. ENSURE CLAMPS ARE OPPOSITE OF CROSSTUBE SUPPORT.
- EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.

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SUBJECT TO ADJUSTMENT  
WITHOUT NOTICE  
WORK ORDER  
NO. 41853  
280-908

RELEASED  
2009-10-29

D	REFORMAT/REVISE GENERAL NOTES/PART LIST; REORGANIZED VIEWS AND REFORMATTED DRAWING TO CURRENT STANDARDS; ADD -141B (ZN B4-2, D4-2); REMOVED REF & ADD TOLERANCES (ZN B4-3, C6-3, C8-3 & B6-3); RELOCATED FLAG #6 PER PAR 08-046 (ZN A5-3); MOVED TURNING DETAIL & UPDATED TOLERANCE TO SHEET 4	RF	09.09.30
C	REMOVE -851 ABRASION STRIP; ADD MAGNOBOND 6398, CUSHION, REVERSE CLAMPS	PH	07.03.08
B	ADD HOLES FOR COMPATABILITY WITH BHT/AA SKIDTUBES	PH	05.02.04
A	NEW ISSUE	PH	00.12.12
REV.	DESCRIPTION	BY	DATE
DESIGN	PH	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	PH	DRAWING NO.	REV. D
MFG. APPR.	PH	D212-664-141	SHEET 1 OF 4
APPROVED	PH	TITLE	SCALE
DE APPR.	PH	XTUBE ASSY (205/212/412 HI FWD)	NTS
DATE	09.09.30	COPYRIGHT © 2000 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESSED CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

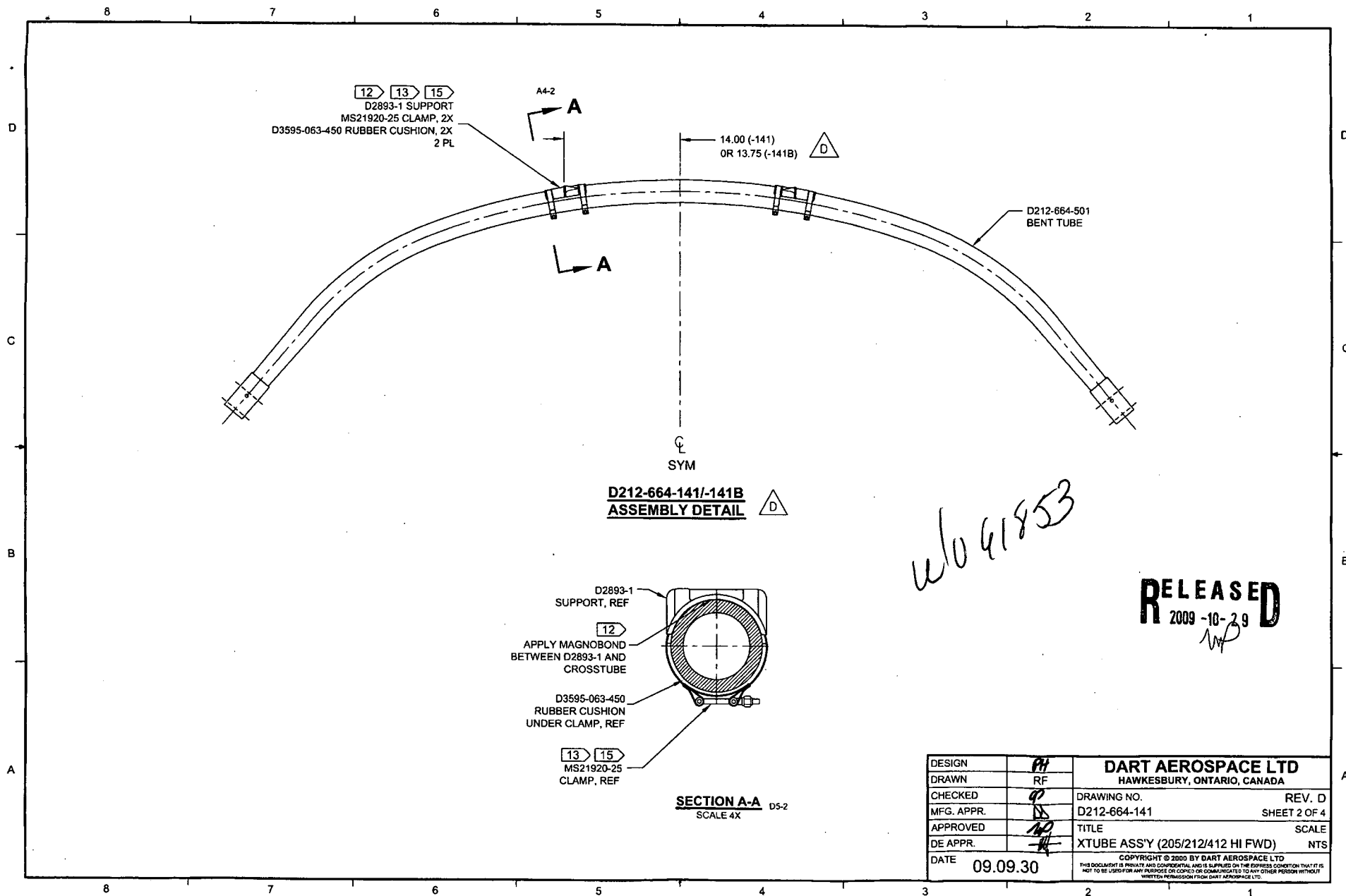
Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries





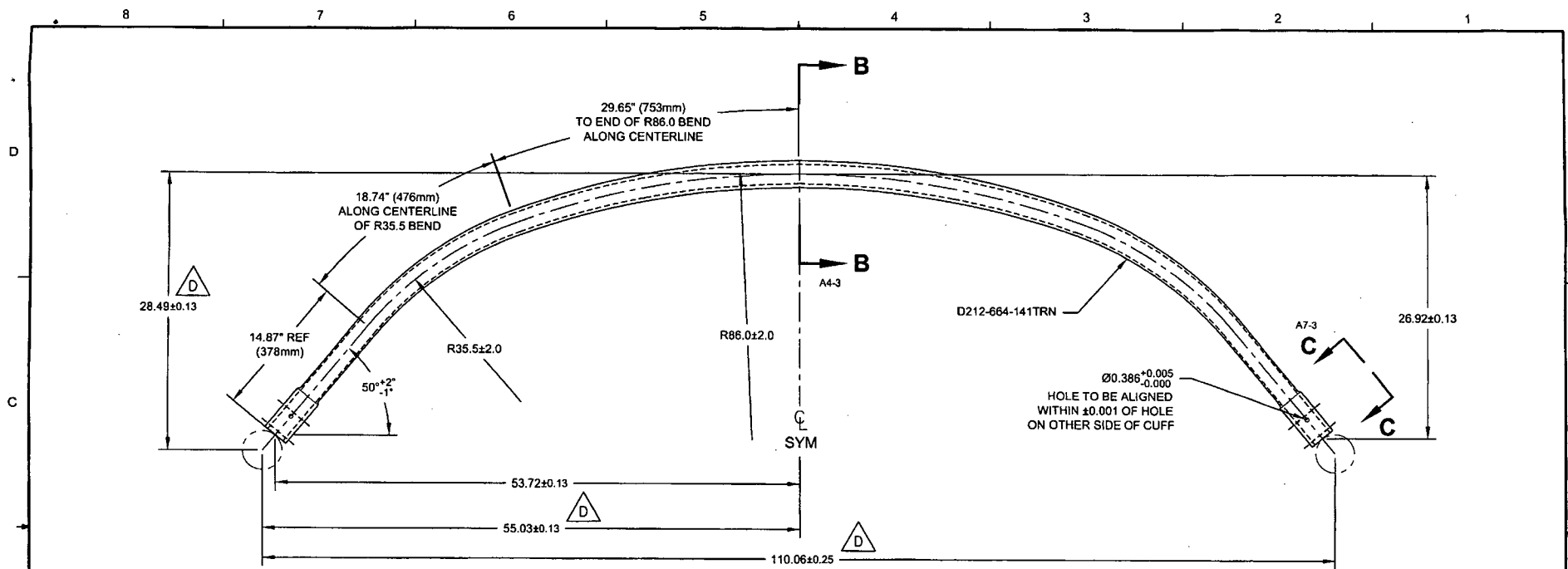
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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

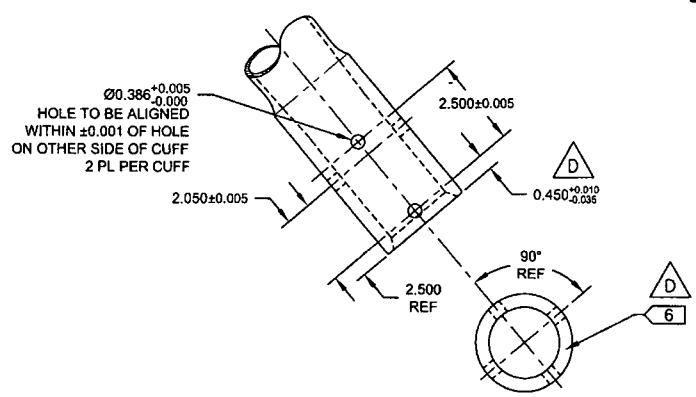


**D212-664-501**  
**BENDING AND DRILLING DETAIL**

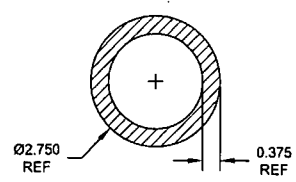
10 D

*w/061853*

**RELEASED**  
 2009-10-29  
*MP*



**VIEW C-C: CUFF DETAIL**  
 SCALE 3X



**SECTION B-B**  
 SCALE 4X

DESIGN	PH	<b>DART AEROSPACE LTD</b>	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	Q	DRAWING NO.	REV. D
MFG. APPR.	DS	D212-664-141	SHEET 3 OF 4
APPROVED	MP	TITLE	SCALE
DE APPR.	CH	XTUBE ASS'Y (205/212/412 HI FWD)	NTS
DATE	09.09.30	COPYRIGHT © 2006 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

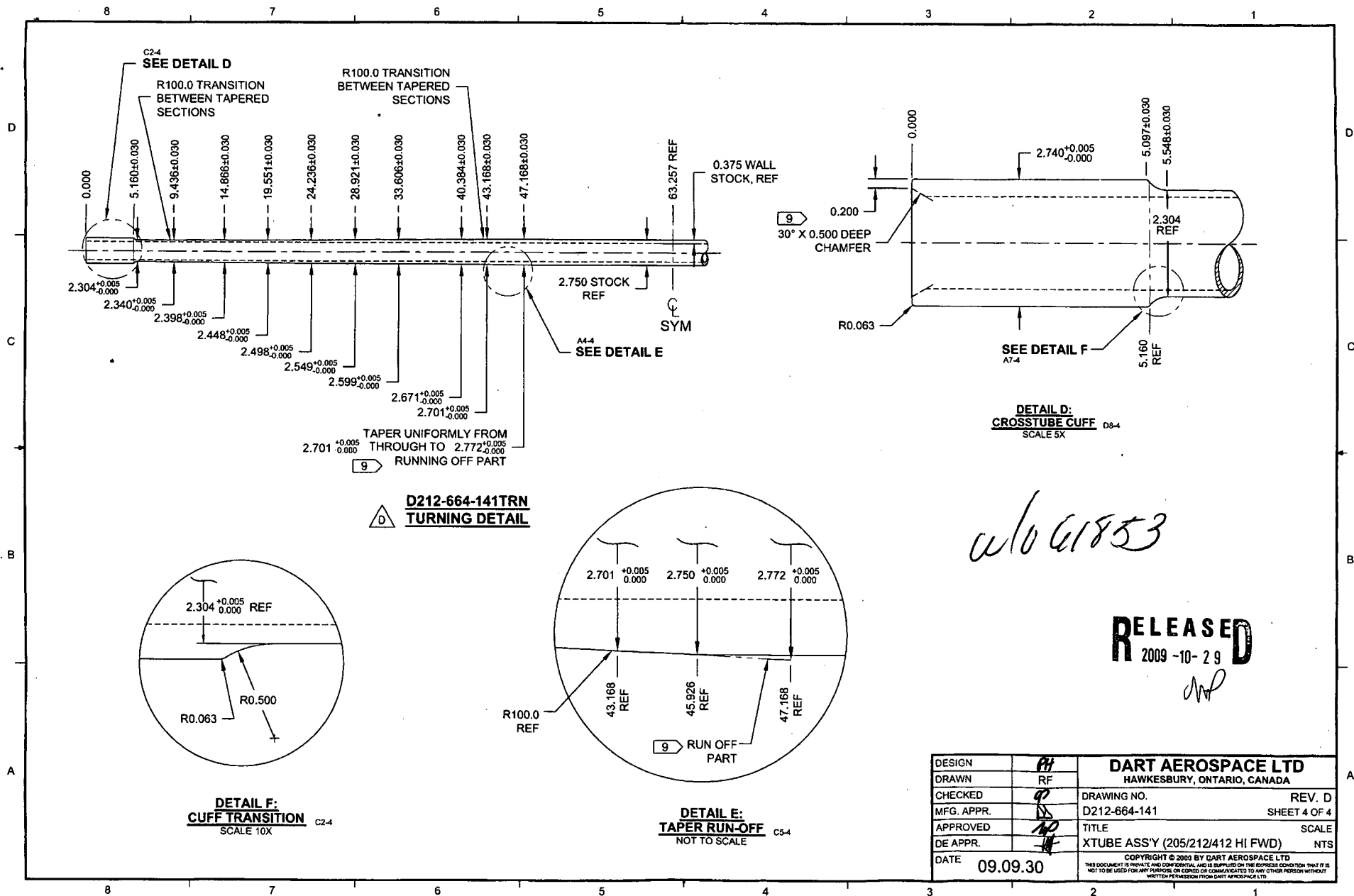
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



## LIQUID PENETRANT TEST REPORT

P- 15193

PAGE 1 OF 1

CLIENT DACT Aerospace DATE SEP-21-2010 TIME AM ☒ PM ☐  
ATTENTION LINDA / CHATEL ACUREN JOB No. 188-10-0889  
ADDRESS 1270 ABELEEN ST. PO/VO No. —  
HAWKES BURY, ON. WORK LOCATION HAWKES BURY PLANT  
ACCEPTANCE STD. ASTM 1417 REV./DATE 2007  
PROJECT F.P.I. (10) ON CROSS TUBES  
ITEM(S) EXAMINED (7) MACHINED PARTS

JOB DESCRIPTION PROCEDURE No. LT0002 REV./DATE TECHNIQUE No. LT Tech 2 REV./DATE  
PART No. — MATERIAL STAINLESS STEEL THICKNESS T  
SCOPE WET FLUORESCENT LIQUID PENETRANT 2 + ALUMINUM  
INSPECTION CARRIED OUT ON 100% EXTERNAL SURFACE

## TEST DETAILS

METHOD ☒ FLUORESCENT ☐ VISIBLE ☒ WATER WASH ☐ SOLVENT REMOVABLE ☐ POST EMULSIFIED  
FAMILY BRAND MAGNA FLUX BLACK LIGHT S/N 16459 ☐ OUTPUT > 1000  $\mu$ W/cm<sup>2</sup> ☐ AMBIENT < 2 fc  
PENETRANT ZL67 MINIMUM DWELL TIME 45 MIN. LIGHTING EQUIP. ☐ FLASHLIGHT ☐ TROUBLELIGHT ☐ OUTPUT > 100 fc @ SURFACE  
PENETRANT REMOVER H2O MINIMUM DRY TIME >10 MIN. OTHER LAB NO  
DEVELOPER SKD 52 MINIMUM DWELL TIME 10 MIN. LIGHT METER S/N 1098806 CAL DUE DATE OCT 17  
DEVELOPER TYPE ☒ NON AQUEOUS ☐ AQUEOUS ☐ DRY

## TEST SURFACE

SURFACE CONDITION ☐ AS GROUND ☐ AS WELDED ☒ MACHINED ☐ SHOT BLASTED ☒ CLEAN BARE METAL  
SURFACE TEMPERATURE ☐ < -4°C/ 20°F ☐ -4°C/ 20°F TO 10°C/50°F ☒ 10°C/50°F TO 52°C/125°F ☐ > 52°C/125°F

RESULTS- ☒ METRIC ☐ IMPERIAL

7 SLEEVE'S → W.O. 62188 ✓  
1 CROSS TUBE → W.O. 61298 ✓  
1 CROSS TUBE → W.O. 61299 ✓  
1 CROSS TUBE → W.O. 61418 ✓  
1 CROSS TUBE → W.O. 61417 ✓  
1 CROSS TUBE → W.O. 61959 ✓  
1 CROSS TUBE → W.O. 61958 ✓  
1 CROSS TUBE → W.O. 61852 ✓  
1 CROSS TUBE → W.O. 61853 ✓  
1 CROSS TUBE → W.O. 61507 ✓  
1 CROSS TUBE → W.O. 61508 ✓

INDICATIONS ON CROSSTUBES  
W.O. #'S → 61852, 61853.

## Scope of Services

The agreement of Acuren Group Inc. to perform services extends only to those services provided for in writing. Under no circumstances shall such services extend beyond the performance of the requested services. It is expressly understood that all descriptions, comments and expressions of opinion reflect the opinions or observations of Acuren Group Inc. based on information and assumptions supplied by the owner/operator and are not intended nor can they be construed as representations or warranties. Acuren Group Inc. is not assuming any responsibilities of the owner/operator and the owner/operator retains complete responsibility for the engineering, manufacture, repair and use decisions as a result of the data or other information provided by Acuren Group Inc. In no event shall Acuren Group Inc.'s liability in respect of the services referred to herein exceed the amount paid for such services.

## Standard of Care

In performing the services provided, Acuren Group Inc. uses the degree, care and skill ordinarily exercised under similar circumstances by others performing such services in the same or similar locality. No other warranty, expressed or implied, is made or intended by Acuren Group Inc.

## SIGNATURES

CLIENT REPRESENTATIVE Eric Downing DTR # E63391  
TECHNICIAN (SIGNATURE): Mike Johnson SIGNATURE  
NAME (PRINT): Mike Johnson REPORT REVIEWED BY:  
1<sup>ST</sup> TECHNICIAN 2<sup>ND</sup> TECHNICIAN  
CGSB LEVEL II SNT LEVEL — CGSB LEVEL — SNT LEVEL —  
CGSB REG. No 6606 CGSB REG. No —



## LIQUID PENETRANT TEST REPORT

P- 15194

PAGE 1 OF 1

CLIENT DART AEROSPACE DATE SEPT-28-2010 TIME AM ☒ PM ☐  
ATTENTION LINDA/CHANTEL ACUREN JOB NO. 108-10-0895  
ADDRESS 1270 ABERDEEN POWO NO. 12653  
HAWKESBURY CMT. WORK LOCATION HAWKESBURY PLANT  
ACCEPTANCE STD. ASTM 1417 REV./DATE 2005  
PROJECT F.P.I. ON CROSS TUBES AND MACHINED PARTS  
ITEM(S) EXAMINED (4) CROSS TUBES (16) - STUDS

JOB DESCRIPTION PROCEDURE NO. LT-0002 REV./DATE - TECHNIQUE NO. LT-TA#2 REV./DATE -  
PART NO. - MATERIAL STAINLESS STEEL THICKNESS ALUMINE ALUMINUM  
SCOPE WET FLOURESCENT LIQUID PENETRANT INSPECTION  
CARRIED OUT ON 100% EXTERNAL SURFACE

## TEST DETAILS

METHOD <input checked="" type="checkbox"/> FLUORESCENT <input type="checkbox"/> VISIBLE	<input checked="" type="checkbox"/> WATER WASH <input type="checkbox"/> SOLVENT REMOVABLE <input type="checkbox"/> POST EMULSIFIED
FAMILY BRAND <u>MASNA FLUX</u>	BLACK LIGHT S/N <u>16459</u> <input type="checkbox"/> OUTPUT > 1000 $\mu$ W/cm <sup>2</sup> <input type="checkbox"/> AMBIENT < 2 fc
PENETRANT <u>ZL 67</u> MINIMUM DWELL TIME <u>45</u> MIN.	LIGHTING EQUIP. <input type="checkbox"/> FLASHLIGHT <input type="checkbox"/> TROUBLELIGHT <input type="checkbox"/> OUTPUT > 100 fc @ SURFACE
PENETRANT REMOVER <u>H2O</u> MINIMUM DRY TIME <u>&gt;10</u> MIN.	OTHER <u>LABINO</u>
DEVELOPER <u>SKD 52</u> MINIMUM DWELL TIME <u>10</u> MIN.	LIGHT METER S/N <u>1098866</u> CAL DUE DATE <u>OCT 19</u>
DEVELOPER TYPE <input checked="" type="checkbox"/> NON AQUEOUS <input type="checkbox"/> AQUEOUS <input type="checkbox"/> DRY	<u>2010</u>

## TEST SURFACE

SURFACE CONDITION <input type="checkbox"/> AS GROUND <input type="checkbox"/> AS WELDED <input checked="" type="checkbox"/> MACHINED <input type="checkbox"/> SHOT BLASTED <input checked="" type="checkbox"/> CLEAN BARE METAL
SURFACE TEMPERATURE <input type="checkbox"/> < -4°C/ 20°F <input type="checkbox"/> -4°C/ 20°F TO 10°C/ 50°F <input checked="" type="checkbox"/> 10°C/ 50°F TO 52°C/ 125°F <input type="checkbox"/> > 52°C/ 125°F

RESULTS- (☐ METRIC ☐ IMPERIAL)

16 - STUDS - W.O. 61370 ✓  
1 - CROSS TUBE - W.O. 62045 ✓  
1 - CROSS TUBE - W.O. 61370 ✓  
1 - CROSS TUBE - W.O. 61852 ✓  
1 - CROSS TUBE - W.O. 61853 ✓

SEE PREVIOUS F.P.I.  
REPORT # 15193  
IN REGARDS TO  
- CROSS TUBES - W.O. 61852  
- W.O. 61853...

*M/10/09/29*

## Scope of Services

The agreement of Acuren Group Inc. to perform services extends only to those services provided for in writing. Under no circumstances shall such services extend beyond the performance of the requested services. It is expressly understood that all descriptions, comments and expressions of opinion reflect the opinions or observations of Acuren Group Inc. based on information and assumptions supplied by the owner/operator and are not intended nor can they be construed as representations or warranties. Acuren Group Inc. is not assuming any responsibilities of the owner/operator and the owner/operator retains complete responsibility for the engineering, manufacture, repair and use decisions as a result of the data or other information provided by Acuren Group Inc. In no event shall Acuren Group Inc.'s liability in respect of the services referred to herein exceed the amount paid for such services.

## Standard of Care

In performing the services provided, Acuren Group Inc. uses the degree, care and skill ordinarily exercised under similar circumstances by others performing such services in the same or similar locality. No other warranty, expressed or implied, is made or intended by Acuren Group Inc.

## SIGNATURES

CLIENT REPRESENTATIVE <u>MATTHEW MURPHY</u> PRINT <u>Matthew Murphy</u> SIGNATURE	DTR # <u>E-63393</u>
TECHNICIAN (SIGNATURE): <u>Nike Johnston</u> 1 <sup>st</sup> TECHNICIAN	REPORT REVIEWED BY:
NAME (PRINT): <u>Nike Johnston</u>	NAME INITIALS
CGSB LEVEL <u>II</u> SNT LEVEL <u>CGSB REG. No 6606</u>	CGSB LEVEL <u>CGSB REG. No</u> SNT LEVEL



p/n D212-664-141 Cond: Bent  
 BATCH B61852

LOCATION	OD1 OD2		ODavg ODdwg		Dev.	Measurement				Deviation from nominal			
						Wall 1	Wall 2	Wall 3	Wall 4	Wall 1	Wall 2	Wall 3	Wall 4
						top	bottom	side 1	side 2	top	bottom	side 1	side 2
5.160	2.309	2.312	2.311	2.304	0.007	0.184	0.136	0.157	0.154	0.032	-0.016	0.005	0.002
9.436	2.318	2.353	2.336	2.340	-0.004	0.204	0.149	0.173	0.169	0.034	-0.021	0.003	-0.001
14.866	2.309	2.481	2.395	2.398	-0.003	0.235	0.169	0.208	0.200	0.036	-0.030	0.009	0.001
19.551	2.329	2.555	2.442	2.448	-0.006	0.254	0.206	0.233	0.231	0.030	-0.018	0.009	0.007
24.236	2.415	2.572	2.494	2.498	-0.005	0.278	0.236	0.254	0.259	0.029	-0.013	0.005	0.010
28.921	2.497	2.604	2.551	2.549	0.002	0.301	0.262	0.288	0.275	0.027	-0.013	0.014	0.001
33.606	2.547	2.645	2.596	2.599	-0.003	0.326	0.291	0.310	0.300	0.026	-0.009	0.010	0.000
40.384	2.660	2.682	2.671	2.671	0.000	0.360	0.322	0.349	0.339	0.025	-0.013	0.014	0.004
STOCK	2.738	2.750	2.744	2.750	-0.006	0.383	0.375	0.376	0.383	0.008	0.000	0.001	0.008

LOCATION	OD1 OD2		ODavg ODdwg		Dev.	Wall 1	Wall 2	Wall 3	Wall 4	Wall 1	Wall 2	Wall 3	Wall 4
						top	bottom	side 1	side 2	top	bottom	side 1	side 2
5.160	2.300	2.302	2.301	2.304	-0.003	0.172	0.148	0.158	0.152	0.020	-0.004	0.006	0.000
9.436	2.311	2.348	2.330	2.340	-0.011	0.192	0.160	0.178	0.162	0.022	-0.010	0.008	-0.008
14.866	2.322	2.464	2.393	2.398	-0.005	0.224	0.188	0.215	0.190	0.025	-0.011	0.016	-0.009
19.551	2.331	2.547	2.439	2.448	-0.009	0.247	0.223	0.243	0.211	0.023	-0.001	0.019	-0.013
24.236	2.396	2.573	2.485	2.498	-0.014	0.273	0.250	0.272	0.232	0.024	0.001	0.023	-0.017
28.921	2.487	2.603	2.545	2.549	-0.004	0.292	0.273	0.292	0.265	0.018	-0.001	0.018	-0.009
33.606	2.540	2.644	2.592	2.599	-0.007	0.315	0.301	0.314	0.291	0.015	0.001	0.014	-0.009
40.384	2.654	2.681	2.668	2.671	-0.003	0.348	0.339	0.346	0.328	0.013	0.004	0.011	-0.007
STOCK	2.741	2.750	2.746	2.750	-0.005	0.381	0.372	0.376	0.375	0.006	-0.003	0.001	0.000

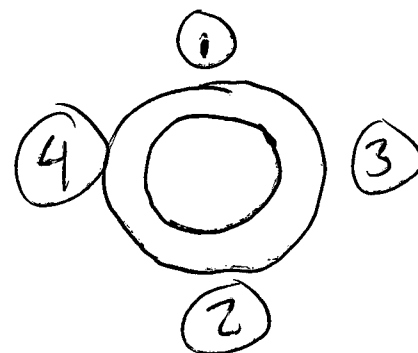
p/n D212-664-141 Cond: Bent  
 BATCH B61853

LOCATION	OD1 OD2		ODavg ODdwg		Dev.	Wall 1	Wall 2	Wall 3	Wall 4	Wall 1	Wall 2	Wall 3	Wall 4
						top	bottom	side 1	side 2	top	bottom	side 1	side 2
5.160	2.306	2.313	2.310	2.304	0.006	0.155	0.163	0.161	0.155	0.003	0.011	0.009	0.003
9.436	2.315	2.351	2.333	2.340	-0.007	0.177	0.171	0.169	0.172	0.007	0.001	-0.001	0.002
14.866	2.319	2.463	2.391	2.398	-0.007	0.209	0.196	0.194	0.209	0.010	-0.003	-0.005	0.010
19.551	2.335	2.541	2.438	2.448	-0.010	0.234	0.228	0.214	0.239	0.010	0.004	-0.010	0.015
24.236	2.414	2.566	2.490	2.498	-0.008	0.255	0.256	0.239	0.266	0.006	0.007	-0.010	0.017
28.921	2.499	2.599	2.549	2.549	0.000	0.288	0.284	0.265	0.291	0.014	0.010	-0.009	0.017
33.606	2.546	2.644	2.595	2.599	-0.004	0.310	0.303	0.289	0.314	0.010	0.003	-0.011	0.014
40.384	2.659	2.682	2.671	2.671	-0.001	0.344	0.342	0.330	0.345	0.009	0.007	-0.005	0.010
STOCK	2.736	2.747	2.742	2.750	-0.008	0.371	0.386	0.375	0.368	-0.004	0.011	0.000	-0.007

LOCATION	OD1 OD2		ODavg ODdwg		Dev.	Wall 1	Wall 2	Wall 3	Wall 4	Wall 1	Wall 2	Wall 3	Wall 4
						top	bottom	side 1	side 2	top	bottom	side 1	side 2
5.160	2.302	2.309	2.306	2.304	0.002	0.153	0.165	0.161	0.182	0.001	0.013	0.009	0.030
9.436	2.308	2.355	2.332	2.340	-0.008	0.169	0.176	0.155	0.183	-0.001	0.006	-0.015	0.013
14.866	2.315	2.467	2.391	2.398	-0.007	0.201	0.210	0.180	0.222	0.002	0.011	-0.019	0.023
19.551	2.324	2.544	2.434	2.448	-0.014	0.220	0.230	0.205	0.256	-0.004	0.006	-0.019	0.032
24.236	2.403	2.567	2.485	2.498	-0.013	0.248	0.262	0.231	0.277	-0.001	0.013	-0.018	0.028
28.921	2.495	2.607	2.551	2.549	0.002	0.284	0.283	0.266	0.298	0.010	0.009	-0.008	0.024
33.606	2.554	2.642	2.598	2.599	-0.001	0.308	0.309	0.293	0.318	0.008	0.009	-0.007	0.018
40.384	2.657	2.693	2.675	2.671	0.004	0.342	0.342	0.332	0.350	0.007	0.007	-0.003	0.015
STOCK													

WALL MEASUREMENTS

AP 10.10.07



## REFERENCE ONLY

## 5.0 PARTS LIST

## 5.1 HIGH GEAR CROSSTUBES

Item	-101	-201	-203	Part Number	Description
	X			D212-664-101	CROSSTUBE INSTALLATION, 204/205/210/212/214/412, UH-1H, UH-1A/B/E/F/L/P, TH-1F/L, HH-1K HIGH FWD
		X		D212-664-201	CROSSTUBE INSTALLATION, 204/205/210/212/214, UH-1H, UH-1A/B/E/F/L/P, TH-1F/L, HH-1K HIGH AFT
			X	D412-664-203	CROSSTUBE INSTALLATION, 412 HIGH AFT
1	1			D212-664-141	CROSSTUBE ASSEMBLY, 204/205/210/212/214/412, UH-1H, UH-1A/B/E/F/L/P, TH-1F/L, HH-1K HIGH FWD
2		1		D212-664-241	CROSSTUBE ASSEMBLY, 204/205/210/212/214, UH-1H, UH-1A/B/E/F/L/P, TH-1F/L, HH-1K HIGH AFT
3			1	D412-664-243	CROSSTUBE ASSEMBLY, 412 HIGH AFT
10	2			* D2893-1	SUPPORT
11	4			* D3595-063-450	RUBBER CUSHION
12	4			* MS21920-25	CLAMP (OR MS21042-26)
13	4			AN6-35A	BOLT
14	4			AN6-36A	BOLT
15	6			MS21042L6	NUT (OR MS21042-6)
16	18			AN960JD616	WASHER
20		2		* D2940-1	SUPPORT
21		4		* D3595-063-530	RUBBER CUSHION
22		4		* MS21920-28	CLAMP (OR MS21042-30)
23		4		AN6-40A	BOLT
24		2		AN6-41A	BOLT
25		6		MS21042L6	NUT (OR MS21042-6)
26		18		AN960JD616	WASHER
30			1	* D2896-1	SUPPORT
31			2	* D2856-600-1009	ABRASION STRIP
32			2	* D3595-063-570	RUBBER CUSHION
33			4	* MS21920-28	CLAMP
34			2	* MS21920-30	CLAMP (OR MS21042-32)
35			4	AN6-40A	BOLT
36			2	AN6-41A	BOLT
37			6	MS21042L6	NUT (OR MS21042-6)
38			18	AN960JD616	WASHER
39			2	* D3189-1	CHAFING SHIELD
50	1	1		D3428-1	PLACARD

\*REFERENCE ONLY. PARTS ARE INCLUDED IN D212-664-141/-241 OR D412-664-243 ASSEMBLIES ABOVE  
NOTE: KITS INCLUDE EXTRA HARDWARE FOR COMPATIBILITY WITH BOTH DART AND BELL/AA  
SKIDTUBES.

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